the saliva and the intestinal juices may reach the starch. The disintegration of these walls is possibly purely mechanical, but it is exceedingly important.

It is hardly possible to overcook starch, unless one is using it simply as a thickening agent. One might, for instance, cook a corn-starch pudding so long that part of the starch would be changed into dextrin with a distinct loss of thickening power and a probable increase in digestibility. This change and the further one into sugar are almost sure to take place if starch is cooked for any length of time with an acid like lemon-juice.

Many foods contain both proteid and starch, and the problem becomes one of reconciling the low cooking temperature of the proteid with the high cooking temperature of the starch. In combinations of materials this can often be effected by first cooking the starch and then adding the proteid. For instance, a certain rule calls for milk, corn-starch, and egg. The egg in this case must be added just at the end of the process after the starch has been thoroughly cooked. When this is impossible, as it often is (for instance, in the case of the milk in the same rule), the principle of proteid cookery must be sacrificed to that of starch. In other words, it is more important to have the starch thoroughly cooked than to have the proteid cooked at a low temperature if there must be a choice between the two. A good illustration of this is the case of bread where we have both proteid and starch. We cannot separate these, therefore the higher temperature and the long thorough cooking must be the rule.

(To be continued.)

FORMULÆ FOR ANTISEPTIC SOLUTIONS USED IN THE ILLINOIS TRAINING-SCHOOL FOR NURSES

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THESE formulæ are not absolutely accurate but sufficiently so for practical purposes.

Bichloride of Mecury (corrosive sublimate; mercuric chloride).

Bichloride of Mercury Solution (1 in 500).

Bichloride of mercury, two drachms (by weight); common salt (sodium chloride), ten drachms; cold sterile water, one gallon.

Dissolve the salt and corrosive sublimate in about half a pint of water; filter this into sufficient water to make the gallon. Bichloride

of mercury is very heavy and requires thorough mixing. This solution may also be made without salt.

Metric formula: bichloride of mercury, eight grammes; cold sterile water, four litres.

Solutions of compounds of mercury must never be used on steel instruments or other metallic substances.

To make 1 in 1000 solution, take one part 1 in 500 solution and one part water.

To make 1 in 2000 solution, take one part 1 in 500 solution and three parts water.

To make 1 in 5000 solution, take one part 1 in 500 solution and nine parts water.

Carbolic Acid (phenic acid; phenol; phenyl alcohol).—An inflammable crystalline substance which partially melts on exposure to moist air.

Ninety-five Per Cent. Carbolic Acid.

To three fluidrachms of hot water add enough melted crystals to make eight fluidounces. Mix thoroughly until clear, and filter if necessary.

Metric formula: hot water, ten cubic centimetres; enough melted crystals to make two hundred cubic centimetres.

Five Per Cent. Carbolic Acid in Solution (1 in 20).

Cold sterile water, one gallon; ninety-five per cent. carbolic acid, seven fluidounces.

Shake thoroughly and frequently until all globules are dissolved.

Metric formula: cold sterile water, four litres; carbolic acid, ninety-five per cent., two hundred and ten cubic centimetres.

To make two and one-half per cent. take one part five per cent and one part water.

To make two per cent. take two parts five per cent. and three parts water.

To make one per cent. take one part five per cent. and four parts water.

Four Per Cent. Carbolic Acid Solution.

Cold sterile water, one gallon; ninety-five per cent. carbolic acid, five fluidounces.

This solution is often erroneously called and used as a five per cent. solution. For all practical purposes it is, however, preferable to five per cent.

To make two per cent. take one part four per cent. and one part water.

To make one per cent. take one part four per cent. and three parts water.

Boric Acid (boracic acid).—A saturated solution (sat. sol. or s. s.) contains about four per cent. boric acid. It is best made by putting an excess of the crystals on a filter and pouring the quantity of boiling or very hot water over them slowly until dissolved. Boric acid crystals are very light, the measured quantity being far short of the required quantity by weight. Hot water dissolves more than cold, the excess being precipitated as crystals when the solution cools.

Stock Salt Solution is kept for the purpose of making normal salt solution quickly and accurately.

Sodium chloride, one and a half ounces (by weight); water, eight fluidounces.

Boil in a closed vessel fifteen minutes. When cold make up with sterile water to eight fluidounces. Strain through sterile cotton into a sterile bottle and keep tightly corked.

Metric formula: salt, sixty grammes; water, two hundred cubic centimetres.

Normal Salt Solution should contain ninety grains salt in one quart.

Metric formula: six grammes to one litre.

Take one fluidounce of stock salt solution to make one quart normal salt solution.

Take twenty cubic centimetres metric stock solution to make one litre normal salt solution.

The stock solution should be added to the necessary amount of sterile water of the required temperature and mixed well.

Formaldehyde is a gas. Commercially it comes to us in solution, formalin, containing about forty per cent. of the gas. It also comes as a solid, known as paraform or paraformaldehyde, used only for fumigation with a specially designed lamp.

One Per Cent. Formaldehyde Solution (1 in 100).

Formalin, six and a half fluidrachms; cold sterile water to one quart.

Metric formula: formalin, twenty-five cubic centimetres; cold sterile water to one litre.

One Per Cent. Formalin Solution.

Formalin, two and a half fluidrachms; cold sterile water to one quart.

Metric formula: formalin, ten cubic centimetres; cold sterile water to one litre.

1 in 1000 Formaldehyde Solution.

Formalin, thirty-eight minims; cold sterile water to one quart.

Metric formula: formalin, 2.5 cubic centimetres; cold sterile water to one litre.

1 in 1000 Formalin Solution.

Formalin, fifteen minims; cold sterile water to one quart.

Metric formula: formalin, one cubic centimetre; cold sterile water to one litre.

These solutions must always be prepared with cold water, because the gas is given off when heated.

Crenosol.—A thick, dark-brown preparation from coal-tar; turns bluish-white on the addition of water. It can be used full strength, but must be applied after the preliminary scrubbing with soap and water and when the skin is perfectly dry. Rub in well; leave on for one and one-half to two minutes; then wash off with cold sterile water. There is danger of burning if left on too long or if not thoroughly washed off. For hand solutions, douches, etc., one per cent. and two per cent. solutions (1 in 100 and 1 in 50) are used.

Two Per Cent. Crenosol Solution.

Crenosol, five fluidrachms; sterile water to one quart.

Metric formula: crenosol, twenty cubic centimetres; sterile water to one litre.

Lysol.—A reddish-brown preparation from coal-tar, used for douches and hand solutions in strengths of one per cent. and two per cent.

Two Per Cent. Lysol Solution.

Lysol, five fluidrachms; sterile water to one quart.

Metric formula: lysol, twenty cubic centimetres; sterile water to one litre.

Creolin (kreosol).—A dark-brown, oily product of coal-tar which makes a dirty, milky solution with water. It is used in strengths varying from one-half per cent. to two per cent.

One Per Cent. Creolin Solution.

Creolin, two and a half fluidrachms; sterile water to one quart.

Metric formula: creolin, ten cubic centimetres; sterile water to one litre.

It should be freshly made.

Potassium Permanganate is used in solution of royal blue or purple color. It should be freshly made. Fold in a piece of sterrle

gauze a few crystals and suspend in sterile water of the desired quantity and temperature until the right color is obtained.

Iodine Solution is made by adding to sterile water of the required temperature sufficient tincture of iodine to make the color of sherry wine.

All solutions kept on hand constantly must be changed three times a week.

THE AMERICAN FEDERATION OF NURSES

THE federation was represented at the meeting of the Executive Council of Women at Indianapolis early in February by Miss Helena Barnard, of St. Joseph, Mo., a graduate of the Johns Hopkins Hospital School for Nurses. It is understood that the meetings were well attended and interesting, and that the work of nurses was ably presented by Miss Barnard, whose summary of the year's work in nursing follows:

"The two societies of which the American Federation of Nurses is composed present records for the past year of unusual growth and activity. The American Society of Superintendents of Training-Schools, the older of our organizations, accepted into membership during the past year twenty-three heads of schools or other nursing bodies, and has a large number of applicants awaiting admission. The society now numbers nearly two hundred members, all of whom are superintendents of hospitals or training-schools, thus representing a large institutional, educational, and philanthropic interest. The meeting of the society this year was held in Pittsburg, and was one of the most interesting and enthusiastic gatherings which the society has ever held. (For further details see report of this meeting in the November, 1903, JOURNAL OF NURSING.)

"The other society of the federation, The Nurses' Associated Alumnæ of the United States and its affiliated societies, controls a membership of about five thousand nurses. The secretary reports that there are now fifteen societies awaiting admission at the next meeting. This society held its annual meeting in Boston last June, a meeting which was largely attended. The chief object of this society is the welfare and advancement of the graduate nurse, the establishment of good relationships between herself and the public, and the securing of legislation throughout the country which provides through State registration a means of distinguishing the trained from the untrained nurse.

"Both of these societies have united during the past year in strong efforts in this direction, with the result that State associations of graduate